

**WHAT IS CLAIMED IS:**

1. A method to detect *vanA* in a sample, comprising:
  - a) contacting a sample suspected of comprising amplified *vanA* nucleic acid with at least one *vanA*-specific oligonucleotide probe under high stringency hybridization conditions effective to form a hybrid between the *vanA*-specific oligonucleotide probe and *vanA* nucleic acid in the sample, wherein the *vanA*-specific oligonucleotide probe comprises sequences which include sequences substantially corresponding to nucleotides 870 to 896 of the *vanA* gene, the complement thereof, or a portion thereof, sequences substantially corresponding to nucleotides 851 to 868 of the *vanA* gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 898 to 917 of the *vanA* gene, the complement thereof, or a portion thereof; and
  - b) detecting or determining the presence or amount of hybrid formation.
2. A method to detect *vanB* in a sample, comprising:
  - a) contacting a sample suspected of comprising amplified *vanB* nucleic acid with at least one *vanB*-specific oligonucleotide probe under high stringency hybridization conditions effective to form a hybrid between the *vanB*-specific oligonucleotide probe and *vanB* nucleic acid in the sample, wherein the *vanB*-specific oligonucleotide probe comprises sequences which include sequences substantially corresponding to nucleotides 387 to 404 of the *vanB* gene, the complement thereof, or a portion thereof, sequences substantially corresponding to nucleotides 406 to 423 of the *vanB* gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 426 to 446 of the *vanB* gene, the complement thereof, or a portion thereof; and
  - b) detecting or determining the presence or amount of hybrid formation.
3. A method to detect *vanA* in a sample, comprising:

a) contacting a biological sample suspected of comprising nucleic acid with at least one *vanA*-specific oligonucleotide primer under conditions effective to amplify *vanA* nucleic acid, wherein the *vanA*-specific oligonucleotide primer comprises sequences which include sequences substantially corresponding to nucleotides 870 to 896 of the *vanA* gene, the complement thereof, or a portion thereof, sequences substantially corresponding to nucleotides 851 to 868 of the *vanA* gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 898 to 917 of the *vanA* gene, the complement thereof, or a portion thereof; and

b) detecting or determining the presence or amount of amplified nucleic acid.

4. A method to detect *vanB* in a sample, comprising:

a) contacting a biological sample suspected of comprising nucleic acid with at least one *vanB*-specific oligonucleotide primer under conditions effective to amplify *vanB* nucleic acid, wherein the *vanB*-specific oligonucleotide primer comprises sequences which include sequences substantially corresponding to nucleotides 387 to 404 of the *vanB* gene, the complement thereof, or a portion thereof, sequences substantially corresponding to nucleotides 406 to 423 of the *vanB* gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 426 to 446 of the *vanB* gene, the complement thereof, or a portion thereof; and

b) detecting or determining the presence or amount of amplified nucleic acid.

5. The method of claim 3 wherein one *vanA*-specific oligonucleotide primer comprises sequences corresponding to nucleotides 851 to 868 of the *vanA* gene or a portion thereof.

6. The method of claim 3 wherein one *vanA*-specific oligonucleotide primer comprises sequences corresponding to the complement of nucleotides 898 to 919 of the *vanA* gene or a portion thereof.
7. The method of claim 3 wherein the presence or amount of amplified nucleic acid is detected or determined with an oligonucleotide probe comprising sequences corresponding to nucleotides 870 to 896 of the *vanA* gene, the complement thereof or a portion thereof.
8. The method of claim 1 wherein one *vanA*-specific oligonucleotide probe comprises sequences corresponding to nucleotides 870 to 896 of the *vanA* gene, the complement thereof or a portion thereof.
9. The method of claim 8 wherein the amplified *vanB* nucleic acid is obtained by amplifying a biological sample comprising nucleic acid with at least one *vanA*-specific oligonucleotide primer comprising sequences corresponding to nucleotides 851 to 868 of the *vanA* gene or a portion thereof, or sequences corresponding to the complement of nucleotides 898 to 917 of the *vanA* gene or a portion thereof.
10. The method of claim 4 wherein one *vanB*-specific oligonucleotide primer comprises sequences corresponding to nucleotides 387 to 404 of the *vanB* gene or a portion thereof.
11. The method of claim 4 wherein one *vanB*-specific oligonucleotide primer comprises sequences corresponding to the complement of nucleotides 426 to 446 of the *vanB* gene or a portion thereof.
12. The method of claim 4 wherein the presence or amount of amplified nucleic acid is detected or determined with an oligonucleotide probe comprising sequences corresponding to nucleotides 406 to 423 of the *vanB* gene, the complement thereof or a portion thereof.

13. The method of claim 2 wherein one *vanB*-specific oligonucleotide probe comprises sequences corresponding to nucleotides 406 to 423 of the *vanB* gene, the complement thereof or a portion thereof.
14. The method of claim 13 wherein the amplified *vanB* nucleic acid is obtained by amplifying a biological sample comprising nucleic acid with at least one *vanB*-specific oligonucleotide primer comprising sequences corresponding to nucleotides 387 to 404 of the *vanB* gene or a portion thereof, or sequences corresponding to the complement of nucleotides 426 to 446 of the *vanB* gene or a portion thereof.
15. The method of claim 1, 2, 3 or 4 wherein the sample is a physiological sample.
16. The method of claim 15 wherein the sample is a peri-rectal sample.
17. The method of claim 1, 7 or 8 further comprising contacting a corresponding sample with a probe which is not a *vanA*-specific probe.
18. The method of claim 1, 7 or 8 further comprising contacting the sample with a probe which is not a *vanA*-specific probe.
19. The method of claim 17 or 18 further comprising comparing the presence or amount of hybrid formation with the *vanA*-specific oligonucleotide probe to the presence or amount of hybrid formation between the sample contacted with the non-*vanA* probe.
20. The method of claim 2, 12, or 13 further comprising contacting a corresponding sample with a probe which is not a *vanB*-specific probe.

21. The method of claim 2, 12, or 13 further comprising contacting the sample with a probe which is not a *vanB*-specific probe.
22. The method of claim 20 or 21 further comprising comparing the presence or amount of hybrid formation with the *vanB* probe to the presence or amount of hybrid formation between the sample contacted with the non-*vanB* probe.
23. The method of claim 17 or 18 wherein the non-*vanA* probe is a *vanB*-specific probe.
24. The method of claim 20 or 21 wherein the non-*vanB* probe is a *vanA*-specific probe.
25. The method of claim 7, 8, 12 or 13 wherein the probe is labeled.
26. The method of claim 23 wherein the *vanA*-specific probe is labeled with a different label than the *vanB*-specific probe.
27. The method of claim 24 wherein the *vanB*-specific probe is labeled with a different label than the *vanA*-specific probe.
28. A method to detect *vanA* nucleic acid and *vanB* nucleic acid in a sample, comprising:
- a) contacting a sample suspected of comprising amplified *vanA* nucleic acid or amplified *vanB* nucleic acid with at least one *vanA*-specific oligonucleotide probe and with at least one *vanB*-specific oligonucleotide probe under high stringency hybridization conditions effective to form a hybrid between the *vanA*-specific oligonucleotide probe and amplified *vanA* nucleic acid and between the *vanB*-specific oligonucleotide probe and amplified *vanB* nucleic acid, wherein the *vanA*-specific oligonucleotide probe comprises sequences which include sequences substantially corresponding to nucleotides 870 to 896 of the *vanA* gene, the

complement thereof, or a portion thereof, sequences substantially corresponding to nucleotides 851 to 868 of the *vanA* gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 898 to 917 of the *vanA* gene, the complement thereof, or a portion thereof, and wherein the *vanB*-specific oligonucleotide probe comprises sequences which include sequences substantially corresponding to nucleotides 387 to 404 of the *vanB* gene, the complement thereof, or a portion thereof, sequences substantially corresponding to nucleotides 406 to 423 of the *vanB* gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 426 to 446 of the *vanB* gene, the complement thereof, or a portion thereof; and

b) detecting or determining the presence or amount of hybrid formation.

29. A method to detect *vanA* nucleic acid and *vanB* nucleic acid in a sample, comprising:

a) contacting a biological sample suspected of comprising *vanA* or *vanB* nucleic acid with at least one *vanA*-specific oligonucleotide primer under conditions effective to amplify *vanA* nucleic acid and with at least one *vanB*-specific oligonucleotide primer under conditions effective to amplify *vanB* nucleic acid, wherein the *vanA*-specific oligonucleotide primer comprises sequences which include sequences substantially corresponding to nucleotides 870 to 896 of the *vanA* gene, the complement thereof, or a portion thereof, sequences substantially corresponding to nucleotides 851 to 868 of the *vanA* gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 898 to 917 of the *vanA* gene, the complement thereof, or a portion thereof, and wherein the *vanB*-specific oligonucleotides primer comprises sequences which include sequences substantially corresponding to nucleotides 387 to 404 of the *vanB* gene, the complement thereof, or a portion thereof, sequences substantially corresponding to nucleotides 406 to 423 of the *vanB* gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 426 to 446 of the *vanB* gene, the complement thereof, or a portion thereof; and

b) detecting or determining the presence or amount of amplified nucleic acid.

30. The method of claim 29 wherein the presence or amount of amplified nucleic acid is detected with at least one *vanA*-specific oligonucleotide probe and at least one *vanB*-specific oligonucleotide probe.

31. The method of claim 28 or 30 wherein the at least one *vanA*-specific oligonucleotide probe and the at least one *vanB*-specific oligonucleotide probe have different labels.

32. An oligonucleotide composition comprising a first oligonucleotide comprising sequences substantially corresponding to nucleotides 870 to 896 of the *vanA* gene, the complement thereof, or a portion thereof, an oligonucleotide comprising sequences substantially corresponding to nucleotides 851 to 868 of the *vanA* gene the complement thereof, or a portion thereof, an oligonucleotide comprising sequences substantially corresponding to nucleotides 898 to 917 of the *vanA* gene, the complement thereof, or a portion thereof, or a combination thereof, wherein the oligonucleotide hybridizes under stringent hybridization conditions to *vanA* DNA.

33. An oligonucleotide composition comprising an oligonucleotide comprising sequences substantially corresponding to nucleotides 387 to 404 of the *vanB* gene, the complement thereof, or a portion thereof, an oligonucleotide comprising sequences substantially corresponding to nucleotides 406 to 423 of the *vanB* gene the complement thereof, or a portion thereof, an oligonucleotide comprising sequences substantially corresponding to nucleotides 426 to 446 of the *vanB* gene, the complement thereof, or a portion thereof, or a combination thereof, wherein the oligonucleotide hybridizes under stringent hybridization conditions to *vanB* DNA.

34. The oligonucleotide composition of claim 32 wherein at least one oligonucleotide has the length and sequence of any of SEQ ID NOs:2-4.
35. The oligonucleotide composition of claim 33 wherein at least one oligonucleotide has the length and sequence of any of SEQ ID NOs:6-9.
36. The oligonucleotide composition of claim 32 or 33 wherein the oligonucleotide is labeled.
37. A kit comprising an oligonucleotide specific for a *vanA* gene and/or a *vanB* gene in a test sample, comprising an oligonucleotide comprising sequences substantially corresponding to nucleotides 870 to 896 of the *vanA* gene, the complement thereof, or a portion thereof, or an oligonucleotide comprising sequences substantially corresponding to nucleotides 406 to 423 of the *vanB* gene, the complement thereof, or a portion thereof, wherein the oligonucleotide hybridizes under stringent hybridization conditions to *vanA* DNA or *vanB* DNA.
38. The kit of claim 37 further comprising at least one non-*vanA* or one non-*vanB* probe.
39. The kit of claim 37 further comprising an oligonucleotide comprising sequences substantially corresponding to nucleotides 387 to 404 of the *vanB* gene, the complement thereof, or a portion thereof, or an oligonucleotide comprising sequences substantially corresponding to nucleotides 426 to 446 of the *vanB* gene, the complement thereof, or a portion thereof.
40. The kit of claim 37 further comprising an oligonucleotide comprising sequences substantially corresponding to nucleotides 851 to 868 of the *vanA* gene, the complement thereof, or a portion thereof, or an oligonucleotide comprising sequences substantially corresponding to nucleotides 868 to 917 of the *vanA* gene, the complement thereof, or a portion thereof, or a combination thereof.



41. The kit of claim 37 wherein at least one oligonucleotide is labeled.
42. A kit comprising one or more oligonucleotides specific for a *vanA* gene in a test sample, comprising: an oligonucleotide comprising sequences substantially corresponding to nucleotides 851 to 868 of the *vanA* gene, the complement thereof, or a portion thereof, or an oligonucleotide comprising sequences substantially corresponding to nucleotides 898 to 917 of the *vanA* gene, the complement thereof, or a portion thereof, or a combination thereof.
43. A kit comprising one or more oligonucleotides specific for a *vanB* gene in a test sample, comprising: an oligonucleotide comprising sequences substantially corresponding to nucleotides 645 to 645 of the *vanB* gene, the complement thereof, or a portion thereof, or an oligonucleotide comprising sequences substantially corresponding to nucleotides 426 to 446 of the *vanB* gene, the complement thereof, or a portion thereof, or a combination thereof.